

ABSTRACT OF THE DISCLOSURE

A method of representing the effects on a received signal of a radio communications channel having L paths with a reduced computational effort is achieved by transforming a representation of the channel into a simplified representation. Each path of the radio communications channel has an average attenuation and a pre-determined respective delay. The received signal includes a combination of correlated components determined from an effect of pulse shaping filters on the received signal, each component being correlated with respect to each of the other components represented by a plurality of correlation coefficients. The method comprises generating a plurality of complex zero mean gaussian random variables each having a pre-determined variance, and summing the variables, to form a representation of the signal received via the radio communications channel. The pre-determined variance of each variable is calculated from the eigen values of a matrix formed from the correlation coefficients and a channel correlation matrix which includes the average attenuation of each of the L paths. Accordingly a transformation of the L -path channel into a simplified representation is effected, without a requirement to represent the correlated components of the received signal. The correlated components may be, for example, the signal components produced by each of a plurality of correlators of a rake receiver.